



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,608	12/11/2001	Jong-Kill Lim	5484-85	7236

7590 10/20/2003  
MARGER JOHNSON & McCOLLOM, P.C.  
1030 S.W. Morrison Street  
Portland, OR 97205

EXAMINER
----------

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
----------	--------------

2851

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/021,608	LIM, JONG-KILL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hung Henry V Nguyen	2851	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed 8/7/03.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka et al (U.S.Pat. 6,051,349).

As to claims 1-11, Yoshioka et al discloses an exposure control apparatus in a lithography system and corresponding method, comprising a resist coating and developing apparatus (1) and a wafer transferring mechanism (22) (see col.1, lines 15-25), a prebake unit, a post exposure bake and hard bake unit (see col.6, lines 3-36), and a CPU (45) for obtaining the temperature data of the post baking temperature unit or the developing solution temperature based on the line width of the resist film/pattern size, and a sensor (65) is disposed within the resist coating and developing unit to obtain the line width of the resist film (see col.14, lines 53-55). It is the Examiner's position that for the sake of simplicity, Yoshioka lacks to show "the optical system for exposing at least a portion of the resist film to a light source". These features are seen to be inherent teachings of an exposure apparatus and are well known per se and must be present for the exposure apparatus to function as intended. Thus, Yoshioka discloses substantially all of the limitations of the instant claims. Yoshioka does not expressly disclose determining the exposure time of the exposure control apparatus based on the resist film temperature data from the resist coating and developing apparatus. However, Yoshioka clearly

teaches the relationship between the line width of the resist film and temperature data for resist coating and developing apparatus (see figs. 7-8, 10 and col.14, lines 50-52) and further teaches the information on the measurement of the line width is fed back so as to control at least one of the resist coating condition ...temperature of the resist solution...the light exposure conditions such as the light exposure time and the focal length, the baking temperature and the baking time” (see col.12, lines 44-54); “the CPU 45 delivers a command signal to the light exposure device based on the results of the line width measurement....to correct each of the conditions on the exposure step S9A such as the light exposure time, the light exposure focus point” (see col.15, lines 15-22), or “it is possible to transmit the result of the line width measurement of the latent image pattern or the result of the line width measurement of the actual resist pattern from the resist coating developing system to the controller (not shown) of the light exposure device so as to permit the arithmetic operation to obtain the value of correction of the various parameters to be carried out on the side of the light exposure device (see col.15, lines 23-34). This provides a clear suggestion that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Yoshioka to obtain the invention as specified in the above claims. In view of Yoshioka’s teachings, it would have been obvious to a skilled artisan to set a desired exposure time based on the resist film temperature data obtained from the coating and developing apparatus to thereby improve the quality of the images to be printed.

***Response to Amendment/Arguments***

3. Applicant's amendment filed August 7, 2003 have been entered. Claims 1-11 have been amended. With respect to applicant's amendment and in view of applicant's remarks and upon identified passages in the specification and drawings, the rejection of claims 4, 8 and 11 under 35 U.S.C. 112, second paragraph is withdrawn.

Turning now to the prior art rejection, applicant's arguments have been carefully reviewed but they are not found persuasive. The applicant is correct in stating that the claimed subject matter to examination will be given their broadest reasonable interpretation consistent with the specification (MPEP 2111). However, the Applicant is also reminded that limitations appearing in the specification are not be read into the claims. *In re Yamamoto*, 740 F. 2d 1569, 1571, 222 USPO 934, 936 (Fed.Cir. 1984). With this in mind, the discussion herein will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitation that is not in the claims or any argument that is irrelevant to or does not relate to any specific claimed language will not be warranted.

In response to applicant's argument that "the applicant teaches that initially calculated temperature values are replaced with practically measured temperature data after the baking processes are performed to adjust the exposure time (Fig.3; page 6, lines 23-page 7, line 3"; the Examiner respectfully disagrees with the applicant because of the following reasons:

a. Firstly the limitations on which the applicant relies on (as stated above) are **not stated** in the claims. It is the claims that define the claimed invention, and it is claims, not specification or drawings that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Ins.,* 7 USPQ2d 1064.

b. Secondly, the rejection here is made under 35 U.S.C. 103(a), accordingly, there need not be a clear suggestion in reference of Yoshioka to “practically measure temperature data”. The issue here is whether or not one of ordinary skill in the art, in the possession of Yoshioka would have incorporated the teachings of Yoshioka to come up with applicant’s invention. As noted in the prosecution history of this case, with respect to independent claims 1, 5 and 9, Yoshioka clearly suggested the information on the measurement of the line width is fed back so as **to control** ... the light exposure conditions such as the **light exposure time**, (see col.12, lines 44-54); and Yoshioka suggested that the temperature of resist film (the post baking temperature and or the developing solution temperature” is controlled based on the measurement of the line width. It is noted that in order to control the temperature of resist film/or the post baking and developing temperature as intended by Yoshioka, it can be assumed that a temperature sensor (that is well known to the art) must be provided into the system of Yoshioka to measure the temperature of resist film. In view of such teachings, it would have been obvious to an artisan to set a proper exposure time in accordance with the resist film temperature data obtained from the coating and developing apparatus. This is to presume less than ordinary skill on the part of the artisan. The person having ordinary skill in the art is usually a graduate engineer. The Examiner fails to find applicant’s arguments convincing that the invention as claimed would have been obvious to such a person in view of the teachings of Yoshioka.

Since the applicant does not separately argue the distinct patentability of dependent claims. Thus, the Examiner assumes that dependent claims are not additionally patentable over and above the patentability of independent claims.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

hvn  
10/10/03

  
**HENRY HUNG NGUYEN**  
**PRIMARY EXAMINER**